Amendments to the Claims

Please cancel claims 4 - 7, 12 - 13, and 18 - 25 without prejudice, amend claims 1 and 10, and add claims 26 - 47, as indicated herein. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A method of treating a food product to reduce microbial burden, comprising:

contacting the food product with an antimicrobial agent, the antimicrobial agent comprising peroxycarboxylic acid, fatty acid, halogen containing antimicrobial agent, quaternary ammonium antimicrobial agent, peroxide, condensed phosphate, or mixtures thereof ; and

irradiating the food product

with less than about 0.5 kGy, wherein the food product is at least one of pork, fresh vegetables, and fruit;

with less than about 1.5 kGy, wherein the food product is at least one of fresh poultry, frozen poultry, and eggs in their shell;

with less than about 5 kGy, wherein the food product is at least one of food additives and food ingredients;

with less than about 10 kGy, wherein the food product is at least one of poultry feed; or

with less than about 15 kGy, wherein the food product is at least one of spices, dried vegetable seasonings, and herb; and

significantly reducing the microbial population.

2. (Original) The method of claim 1, further comprising packaging the food product before irradiation.

3. (Original) The method of claim 1, further comprising washing a food contact surface with an antimicrobial agent.

4 - 7. (Cancelled)

8. (Original) The method of claim 1, wherein the antimicrobial agent comprises a peroxycarboxylic acid.

9. (Original) The method of claim 8, wherein the peroxycarboxylic acid comprises peroxyacetic acid.

10. (Currently amended) The method of claim 8 ~~9~~, wherein the peroxycarboxylic acid ~~further~~ comprises peroxyoctanoic acid.

11. (Original) The method of claim 8, wherein the antimicrobial agent comprises a densified fluid peroxycarboxylic acid composition.

12 - 13. (Cancelled)

14. (Original) The method of claim 1, wherein irradiating comprises exposing the food product to gamma-radiation, X-rays, electron beam, or a combination thereof.

15. (Original) The method of claim 14, wherein exposing the food product to gamma-radiation employs gamma-radiation produced by cobalt-60 or cesium-137.

16. (Original) The method of claim 14, wherein exposing the food product to X-rays comprises electron beam bombardment of tungsten or tantalum.

17. (Original) The method of claim 14, wherein exposing the food product to electron beam comprises single or double sided electron beam irradiation.

18 - 25. (Cancelled)

26. (New) A method of treating a food product to reduce microbial burden, comprising:

contacting the food product with an antimicrobial agent, the antimicrobial agent comprising peroxycarboxylic acid, fatty acid, halogen containing antimicrobial agent, quaternary ammonium antimicrobial agent, peroxide, condensed phosphate, or mixtures thereof ; and

irradiating the food product

with less than about 2 kGy, wherein the food product is at least one of fresh red meat; or

with less than about 3 kGy, wherein the food product is at least one of frozen red meat; and

significantly reducing the microbial population.

27. (New) The method of claim 26, further comprising packaging the food product before irradiation.

28. (New) The method of claim 26, further comprising washing a food contact surface with an antimicrobial agent.

29. (New) The method of claim 26, wherein the antimicrobial agent comprises a peroxycarboxylic acid.

30. (New) The method of claim 29, wherein the peroxycarboxylic acid comprises peroxyacetic acid.

31. (New) The method of claim 29, wherein the peroxycarboxylic acid comprises peroxyoctanoic acid.

32. (New) The method of claim 29, wherein the antimicrobial agent comprises a densified fluid peroxycarboxylic acid composition.

33. (New) The method of claim 26, wherein irradiating comprises exposing the food product to gamma-radiation, X-rays, electron beam, or a combination thereof.

34. (New) The method of claim 33, wherein exposing the food product to gamma-radiation employs gamma-radiation produced by cobalt-60 or cesium-137.

35. (New) The method of claim 33, wherein exposing the food product to X-rays comprises electron beam bombardment of tungsten or tantalum.

36. (New) The method of claim 33, wherein exposing the food product to electron beam comprises single or double sided electron beam irradiation.

37. (New) A method of treating a food product to reduce microbial burden, comprising:

contacting the food product with an antimicrobial agent, the antimicrobial agent comprising peroxycarboxylic acid; and

irradiating the food product

with less than about 0.5 kGy, wherein the food product is at least one of pork, fresh vegetables, and fruit;

with less than about 1.5 kGy, wherein the food product is at least one of fresh poultry, frozen poultry, and eggs in their shell;

with less than about 5 kGy, wherein the food product is at least one of food additives and food ingredients;

with less than about 10 kGy, wherein the food product is at least one of poultry feed;

with less than about 15 kGy, wherein the food product is at least one of spices, dried vegetable seasonings, and herbs;

with less than about 2 kGy, wherein the food product is at least one of fresh red meat; or

with less than about 3 kGy, wherein the food product is at least one of frozen red meat; and

significantly reducing the microbial population.

38. (New) The method of claim 37, wherein the antimicrobial agent further comprises at least one of fatty acid and peroxide.

39. (New) The method of claim 37, further comprising packaging the food product before irradiation.

40. (New) The method of claim 37, further comprising washing a food contact surface with an antimicrobial agent.

41. (New) The method of claim 37, wherein the peroxycarboxylic acid comprises peroxyacetic acid.

42. (New) The method of claim 37, wherein the peroxycarboxylic acid comprises peroxyoctanoic acid.

43. (New) The method of claim 37, wherein the antimicrobial agent comprises a densified fluid peroxycarboxylic acid composition.

44. (New) The method of claim 37, wherein irradiating comprises exposing the food product to gamma-radiation, X-rays, electron beam, or a combination thereof.

45. (New) The method of claim 44, wherein exposing the food product to gamma-radiation employs gamma-radiation produced by cobalt-60 or cesium-137.

46. (New) The method of claim 44, wherein exposing the food product to X-rays comprises electron beam bombardment of tungsten or tantalum.

47. (New) The method of claim 44, wherein exposing the food product to electron beam comprises single or double sided electron beam irradiation.